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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/579,846	05/25/2000	Richard Wisniewski	17882-733	8512

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EXAMINER

FORD, JOHN K

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 03/31/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/579,846	Wisniewski et al.	
	Examiner	Art Unit	
	FORD	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1-7-03
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 3, 6-9 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 3, 6-9 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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Applicants' response has been carefully considered. In it, with regard to independent claims 18-21 applicants have not argued that the examiner's logic in finding "vibrators" and "oscillators" to be semantically indistinguishable in the context of this application (which specification gives neither of these terms any "special" meaning) given their plain meaning. Applicants, by their failure to continue arguing the point, have conceded it for the record.

As well applicants have failed to argue any patentability associated with any particular frequency of oscillation, addressing no remarks as to why claims 6-8 might in anyway be allowable other than for what is claimed in claim 18.

Virtually no remarks are addressed to why claims 19-21 are deemed allowable over the prior art.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 9 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the 1992 Wisniewski and Wu article in view of either of JP 63-296,831 or Tannenbaum 6,299,324. See the W&W article entire document, but in particular read page 134, col. 1, lines 8-16 and lines 32-39.

The "shaker platform" discussed in lines 32-39, which uses "vibrators" (page 134, col. 1, third full paragraph) is deemed to be an "oscillatory driver" as claimed in

claim 18. The heater used during the thawing cycle is discussed on page 135, col. 2, lines 21-32.

Regarding claims 2-3, shaker platforms are known to be harmonic and disharmonic and regarding claims 6-8 are known to come at these frequencies. Moreover the selected frequencies will be largely a function of the mechanical stresses the system will tolerate and hence subject to design choice absent some showing of unexpected results. The specification is devoid of any such showing. Regarding claim 9, this is explicitly taught on page 134, col.1, lines 32-34.

Vibrators which agitate the fluid are disclosed in the Wisniewski and Wu article, which states, in pertinent parts:

"Another option for providing agitation [to the liquid phase] during thawing is to shake or move the entire tank on a mechanical shaker platform". (Page 134, col.1, third full paragraph).

Further on in the same paragraph, it states:

"This method [i.e., to shake or move the entire tank on a mechanical shaker platform] is quite simple and a septic, however it requires heavy equipment and vibrators and is more expensive to scale up".

In the Examiner's dictionary "shake" means=1. To cause to move to and fro with jerky movement or 2. To cause to quiver or trembles; vibrate or rock. Similarly, "oscillate" means 1. to swing back and forth with a steady uninterrupted rhythm or 2. to vary between alternate extremes, usually with a definable period".

Finally, "vibrate" means=1. to move back and forth rapidly or 2. to cause to tremble or quiver. (The American Heritage Dictionary, second college Edition, 1976)

Given the fact that Wisniewski and Wu use a "vibrator" to shake their tank (thereby agitating the contents) there is, in the Examiner's opinion, no difference to be made between a "vibrator" and an "oscillator" given the above definitions. In fact the prior art and applicant's systems will, in the Examiner's opinion, agitate the fluid as those oscillatory or vibratory motions will induce waves in the fluid which will bounce off each other and the ever changing geometry of the melting ice mass to produce essentially random motions (i.e., agitation) within the fluid.

Applicants have not traversed any of the above comments hence they are established facts in this prosecution.

JP 63-296831 discloses a shaker platform for biological materials (which allows the biopharmaceutical solutions) which allows the table to oscillate, i.e., move back and forth on rollers 19 as the eccentric spindle 11 is rotated by the rotary drive mechanism (elements 7, 4, 3 and 2), when solenoid 28 is in its retracted position (as shown in Figure 3). This configuration gives the pure reciprocating straight-motion discussed in the Abstract of JP 63-296831.

Tannenbaum discloses a similar reciprocating laboratory shaker platform using roller (34, 36, 38 and 40) to guide the table in a single reciprocating motion direction.

To have used the shaker platform of JP '831 or Tannenbaum to oscillate the 1992 tank of Wisniewski and Wu back and forth on rollers to effect faster thawing of the frozen product during the thawing phase would have been obvious given the advantages of the "simple mechanisms" and "low cost" of the JP '831 shaker platform, and "inexpensive" and "dependable" advantages of Tannenbaum's shaker platform.

Claims 3 and 6-8 rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 2, 9 and 18-21 above, and further in view of Baldus.

The W&W article is explained above. Baldus suggest that using oscillations (vibrations) of 10-50 Hz (preferably greater than 30 Hz). With "disharmonic" rest periods between them, is extremely effective at shedding ice from a heat exchanger surface. To have oscillated the prior art tank at frequencies of 30 Hz-50 Hz with rest periods would have been obvious to quickly shed ice during the thawing cycle. To have used an oscillation frequency of 10 Hz with disharmonic rest periods would have been obvious since it is within the range suggested as operable by Baldus to produce the desired result.

Claim 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 2, 9 and 18-21 above, and further in view of USP 5,999,701 (Schmidt).

The 1992 W&W article has been explained above. Schmidt discloses an oscillator operating as a frequency of 20-300 Hz to aid in heated thawing frozen liquids (for example injection or infusion solutions). To have operated the tank shaker of the W&W prior art at a frequency of 20 Hz would have been obvious to one of ordinary skill to aid in thawing.

Claim 6-8 rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 2, 9 and 18-21 above, and further in view of DE 3047784 (cited by applicant without translation).

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The 1992 Wisniewski and Wu article is discussed above. To have operated the tank shaker of W&W article at 4 Hz as disclosed on page 5 of DE '784 at lines 28-30 to aid in ice thawing would have been obvious to one ordinary skill.

Applicant was asked to provide a translation of this reference in the previous office action, a request that has now been twice ignored in his response.


Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art as applied to claims 2, 9 and 18-21 above, and further in view of Quan et al. "Effects of Vibration on Ice Contact Melting within rectangular Enclosures".

The 1992 W&W article is explained above. To have operated the tankshaker of the 1992 W&W prior art at 1.1 Hz or .55 Hz or 1.67 Hz to aid in melting would have been obvious from the teachings of the Quan et al. Article.

Moreover, since melting rates increase and peak at around 60 Hz, it would have been obvious, to the extent possible in the W&W prior art (i.e. within the limits of mechanical stresses that could be imposed on such a large tank without compromising its structural integrity), to vibrate the structure at rates faster than 1-2 Hz would have been obvious from the Quan et al. article.

Any inquiry concerning this communication should be directed to John Ford at telephone number 703-308236.

John Ford:jbe
March 17, 2003



John K. Ford
Primary Examiner